

REMARKS

Claim Rejections 35 U.S.C. § 103 (a)

The Examiner has rejected claims 1-30 under 35 U.S.C. §103 (a) as being unpatentable over Sewell (U.S. 6,809,794) in view of Szmanda et al. (U.S. 6,787,286).

Claims 1-12

Applicants respectfully disagree with the Examiner. Applicants have amended claim 1. Support is provided by the specification including in paragraphs [0023]-[0024].

Claim 1, as amended, of Applicants' claimed invention claims a method (200) including: providing a photolithographic scanner, said photolithographic scanner having a light source and a last lens element, said light source producing light having a wavelength, said last lens element having a refractive index; determining an index-matching liquid (205) based on said wavelength and said refractive index; placing said index-matching liquid in contact with said last lens element; determining form and concentration of a set of one or more constituents (210) to improve contact of a photoresist with said index-matching liquid; providing the photoresist to be illuminated by said light through said last lens element and said index-matching liquid; adding said set of one or more constituents to said photoresist (215); and placing said photoresist in contact with said index-matching liquid. See Figure 2.

In contrast, neither the Sewell nor the Szmanda et al. references cited by the Examiner teaches determining form and concentration of a set of one or more constituents to improve contact of a photoresist with a index-matching liquid and adding the one or more constituents to the photoresist to improve contact properties with the index-matching liquid as claimed in claim 1, as amended, of the present invention. Thus, a combination of the method of Sewell and the method of Szmanda et al., even if possible, would not produce the method of Applicants' claimed invention, as claimed in claim 1, as amended. Consequently, the two cited references, whether individually or collectively, do not render obvious claim 1, as amended, of Applicants' claimed invention.

Claims 2-12 are dependent on claim 1. Thus, a combination of the method of Sewell and the method of Szmanda et al. would also not produce the method of Applicants' claimed invention, as claimed in claims 2-12. Consequently, the two cited references, whether individually or collectively, do not render obvious claims 2-12, as amended, of Applicants' claimed invention.

In view of the foregoing, Applicants respectfully request the Examiner to withdraw the rejections to claims 1-12 under 35 U.S.C. §103 (a).

Claims 13-26

Applicants respectfully disagree with the Examiner. Applicants have amended claim 13. Support is provided by the specification, including in paragraphs [0035] and [0037].

Claim 13, as amended, of Applicants' claimed invention claims an apparatus (300) including: a substrate (301); a photoresist (302) deposited on said substrate, said photoresist having incorporated therein one or more additives that modulate an

interface and improve liquid-contact properties of said photoresist to an index-matching liquid (303; the index-matching liquid disposed in contact with said photoresist, the index-matching liquid having a detrimental effect on said photoresist if said one or more additives had not been incorporated into said photoresist; and a last lens element (304). See Figure 4.

In contrast, neither the Sewell nor the Szmanda et al. references cited by the Examiner teaches adding one or more constituents to a photoresist to modulate an interface and improve liquid-contact properties of the photoresist with an index-matching liquid and to prevent a detrimental effect of the index-matching liquid on the photoresist as claimed in claim 13, as amended, of the present invention. Thus, a combination of the apparatus of Sewell and the apparatus of Szmanda et al. would still not produce the apparatus of Applicants' claimed invention, as claimed in claim 13, as amended. Consequently, the two cited references, whether individually or collectively, do not render obvious claim 13, as amended, of Applicants' claimed invention.

Claims 14-26 are dependent on claim 13. Thus, a combination of the method of Sewell and the method of Szmanda et al. would also not produce the method of Applicants' claimed invention, as claimed in claims 14-26.

Consequently, the two cited references, whether individually or collectively, do not render obvious claims 14-26, as amended, of Applicants' claimed invention.

In view of the foregoing, Applicants respectfully request the Examiner to withdraw the rejections to claims 13-26 under 35 U.S.C. §103 (a).

Claims 27-30

Applicants respectfully disagree with the Examiner. Applicants have amended claim 27. Support is provided by the specification, including in paragraphs [0021] and [0030].

Claim 27, as amended, of Applicants' claimed invention claims a system (400) including: a last lens element (404) of a lithography exposure system, said last lens element having a specific index of refraction; an index-matching liquid (403) in contact with said last lens element, said index-matching liquid having an index of refraction equal to said specific index of refraction to within a specified tolerance; and a photoresist layer (402) in contact with said index-matching liquid, said photoresist layer having incorporated therein one or more constituents that reduce surface interaction and protect said photoresist layer from said index-matching liquid. See Figure 3.

In contrast, neither the Sewell nor the Szmanda et al. references cited by the Examiner teaches a photoresist layer having incorporated therein one or more constituents that reduce surface interaction and protect said photoresist layer from said index-matching liquid as claimed in claim 27, as amended, of the present invention. Thus, a combination of the system of Sewell and the system of Szmanski et al. would not produce the system of Applicants' claimed invention, as claimed in claim 27, as amended. Consequently, the two cited references, whether individually or collectively, do not render obvious claim 27, as amended, of Applicants' claimed invention.

Claims 28-30 are dependent on claim 27. Thus, a combination of the system of Szmanda et al. and the system of Sewell would also not produce the system of Applicants' claimed invention, as claimed in claims 28-30. Consequently, the two cited references, whether individually or collectively, do not render obvious claims 28-30, as amended, of Applicants' claimed invention.

In view of the foregoing, Applicants respectfully request the Examiner to withdraw the rejections to claims 27-30 under 35 U.S.C. §103 (a).

Conclusion

Applicants believe that all claims pending, including claims 1-30, are now in condition for allowance so such action is earnestly solicited at the earliest possible date.

Pursuant to 37 C.F.R. 1.136 (a) (3), Applicants hereby request and authorize the U.S. Patent and Trademark Office to treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time.

Should there be any additional charge or fee, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, please charge Deposit Account No. 50-0221.

If a telephone interview would in any way expedite the prosecution of this application, the Examiner is invited to contact the undersigned at (408) 653-7897.

Respectfully submitted,
INTEL CORPORATION

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